APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,114	08/01/2007	Marc A. Ostermeier	62568(71699)	3863

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EDWARDS ANGELL PALMER & DODGE LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER
KETTER, JAMES S

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1636	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/588,114	OSTERMEIER ET AL.
	Examiner	Art Unit	
	James S. Ketter	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>16 February 2010</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-49</u> is/are pending in the application.

    4a) Of the above claim(s) <u>16-37</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15 and 38-49</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>27 July 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/27/06; 1/16/09</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail. Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)　　　　　　**Office Action Summary**　　　　　　Part of Paper No./Mail Date 20100522

Applicant's election without traverse of Group 1, claims 1-15 and 38-49 in the reply filed

on 16 February 2010 is acknowledged.

Claim16-37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as

being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 16 February 2010.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
patent by another filed in the United States before the invention by the applicant for patent, except that an
international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
subsection of an application filed in the United States only if the international application designated the United
States and was published under Article 21(2) of such treaty in the English language.

Claims 1-15 and 38-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsien

et al. (A, newly cited).

Claims 1 is drawn to a method for assembling a fusion molecule, comprising:generating a

circular permutation of an insertion sequence; andinserting the insertion sequence into an

acceptor sequence. Claim 2 specifies within claim 1 that the insertion sequence is inserted at a

selected site in the acceptor sequence. Claim 3 specifies within claim 1 that the insertion

sequence is inserted at a random site in the acceptor sequence. Claim 4is drawn to a method for

assembling a modulatable fusion molecule, comprising:generating a circular permutation of an

insertion sequence;inserting the insertion sequence into an acceptor sequence, wherein the

insertion sequence and the acceptor sequence each comprise a state; andselecting a fusion

molecule, wherein the state of the insertion sequence and the state of the acceptor sequence are

coupled. Claim 5 specifies within claim 4 that the insertion sequence is inserted at a selected site

in the acceptor sequence. Claim 6 specifies within claim 4 that the insertion sequence is inserted

at a random site in the acceptor sequence. Claim 7 specifies within claim 4 that the state of the

insertion sequence is modulated. Claim 8 specifies within claim 4 that the state of the insertion

sequence is modulated in response to a change in the state of the acceptor sequence. Claim 9

specifies within claim 4 that the state of the acceptor sequence is modulated in response to a

change in the state of the acceptor sequence. Claim 10 specifies within claim 4 that the state of

the acceptor sequence is modulated in response to a change in the state of the insertion sequence.

Claim 11 specifies within claim 4 that the fusion molecule comprises a new state. Claim 12 is

drawn to a method for assembling a multistable fusion molecule which can switch between at

least an active state and a less active state, comprising:circularly permuting an insertion

sequence;inserting the insertion sequence into an acceptor sequence, thereby generating a fusion

molecule, wherein either the insertion sequence or the acceptor sequence comprises a state; and

wherein the respective other sequence is responsive to a signal; andselecting a fusion molecule,

wherein the state is coupled to the signal, such that the fusion molecule switches state in

response to the signal. Claim 13 specifies within claim 1 that said insertion sequence and said

acceptor sequences comprise nucleic acids. Claim 14 specifies within claim 13 that the method

comprises: obtaining a first nucleic acid fragment comprising an insertion sequence and a

second nucleic acid fragment comprising an acceptor sequence and inserting said first nucleic

acid fragment into said second nucleic acid fragment. Claim 15 specifies within claim 14 that the

method further comprises providing a library of fusion nucleic acids encoding fusion

polypeptides, said fusion nucleic acids comprising insertion sequences inserted into acceptor

sequences, and selecting fusion polypeptides wherein the states of the insertion and acceptor

polypeptides are coupled. Claim 38 is drawn to a method for assembling a fusion molecule,

comprising: generating a random circular permutation of an insertion sequence; and inserting

the insertion sequence into an acceptor sequence. Claim 39. The method according to claim 38,

wherein the insertion sequence is inserted at a selected site in the acceptor sequence. Claim 40

specifies within claim 38 that the insertion sequence is inserted at a random site in the acceptor

sequence. Claim 41 is drawn to a method for assembling a modulatable fusion molecule,

comprising: generating a random circular permutation of an insertion sequence; inserting the

insertion sequence into an acceptor sequence, wherein the insertion sequence and the acceptor

sequence each comprise a state; and selecting a fusion molecule, wherein the state of the

insertion sequence and the state of the acceptor sequence are coupled. Claim 42 specifies within

claim 41 that the insertion sequence is inserted at a selected site in the acceptor sequence. Claim

43 specifies within claim 41 that the insertion sequence is inserted at a random site in the

acceptor sequence. Claim 44 specifies within claim 41 that the state of the insertion sequence is

modulated. Claim 45 specifies within claim 41 that the state of the insertion sequence is

modulated in response to a change in the state of the acceptor sequence. Claim 46 specifies

within claim 41 that the state of the acceptor sequence is modulated in response to a change in

the state of the acceptor sequence. Claim 47 specifies within claim 4 that the state of the

acceptor sequence is modulated in response to a change in the state of the insertion sequence.

Claim 48 specifies within claim 41 that the fusion molecule comprises a new state. Claim 49 is

drawn to a method for assembling a multistable fusion molecule which can switch between at

least an active state and a less active state, comprising: randomly circularly permuting an

insertion sequence; inserting the insertion sequence into an acceptor sequence, thereby

generating a fusion molecule, wherein either the insertion sequence or the acceptor sequence

comprises a state; and wherein the respective other sequence is responsive to a signal; and

selecting a fusion molecule, wherein the state is coupled to the signal, such that the fusion

molecule switches state in response to the signal.

Tsien et al. teaches, e.g., in the Abstract, "The present invention provides polypeptide and

polynucleotides encoding fluorescent indicators having inserted within a fluorescent moiety a

sensor polypeptide. Also provided are methods of using the fluorescent indicator. Circularly

permuted fluorescent polypeptides and polynucleotides are also provided." At, e.g., the

paragraph bridging columns 6 and 7, the insertion of a circularly-permuted fluorescent protein

into a sensor polypeptide, to make the fluorescent protein controlled by the sensor polypeptide.

At column 41, first full paragraph, it is taught: "The linear, repaired, randomly permuted DNA

library was purified by agarose gel electrophoresis, ligated blunt into the pRSET triple stop

expression vector, and electro-transformed into BL21 bacteria."

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to James S. Ketter whose telephone number is 571-272-0770. The

examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Christopher Low can be reached on 571-272-0951. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSK
10 June 2010

/James S. Ketter/
Primary Examiner, Art Unit 1636